Claims

We claim:

1. A polynucleotide molecule that comprises a nucleotide sequence encoding an active toxin and a nucleotide sequence encoding a phage vector protein.

2. A nucleotide molecule of claim 1 wherein said toxin is derived from *Bacillus thuringiensis*.

3. The polynucleotide molecule of claim 1 wherein said phage vector protein is derived from a filamentous phage vector.

4. The polynucleotide molecule of claim 1 wherein said nucleotide sequence encoding an active toxin and said nucleotide sequence encoding a phage vector protein are expressed as a fusion protein such that a phage is formed having said active toxin displayed on the surface thereof.

5. The polynucleotide molecule of claim 1 that encodes a fusion protein as shown in Figure 1.

6. A polypeptide molecule comprising a phage region and a toxin region wherein said polypeptide molecule is arranged to form a phage having said toxin region displayed on the surface thereof.

7. The polypeptide molecule of claim 6 wherein said toxin region is derived from *Bacillus thuringiensis*.

8. The polypeptide of claim 6 having an amino acid sequence as shown in Figure 1.

9. A method of preparing active *Bacillus thuringiensis* toxins comprising transforming one or more cells with a polynucleotide molecule that comprises a nucleotide sequence which encodes for an active *Bacillus thuringiensis* toxin and a nucleotide sequence which encodes for a phage vector protein; and

growing said one or more cells under conditions such that said polynucleotide molecule is expressed, thereby forming a fusion protein having toxic activity.

10. The method of claim 9 wherein said phage vector protein is derived from a filamentous phage vector.

11. The method of claim 9 wherein said polynucleotide molecule encodes a fusion protein having an amino acid sequence as shown in Figure 1.

12. The method of claim 9 wherein said one or more cells are prokaryotes.

13. The method of claim 13 wherein said one or more cells are of a type selected from the group consisting of *E. coli* strain JM109, *E. coli* strain JM101, *E. coli* K12 strain 294, *E. coli* strain W 3110, *E. coli* X1776, *E. coli* XL-1Blue and *E. coli* B.

14. The method of claim 13 wherein said one or more cells are *E. coli* strain JM109.

15. A method of screening for novel *Bt* toxins comprising obtaining a phage display library comprising a plurality of recombinant phage having a toxin displayed on the surface thereof; and

screening said library to identify a phage clone comprising phage which bind to a toxin specific target.

16. The method of claim 15 further comprising isolating from said phage which bind to a toxin-specific target a polynucleotide molecule having a nucleotide sequence that encodes a toxin.

17. A phage clone comprising phage that comprise a polynucleotide molecule having a nucleotide sequence that encodes a toxin, wherein said phage have said toxin displayed on the surface thereof.

18. An isolated polynucleotide molecule produced by the method of claim 16.

19. One or more plant cells transformed with a polynucleotide molecule produced by the method of claim 16.